



Spongy Moth Control Methods

A Guide for Homeowners

Forestry Topic 68

April 2024

What is the spongy moth?

Spongy moth (*Lymantria dispar*), previously known as gypsy moth, is an invasive species that was introduced to North America from Europe in the mid-1800s and has defoliated hardwoods in Virginia since the 1980s. Caterpillars emerge in the spring and feed on the foliage of hundreds of tree species; they typically prefer oaks, especially white and chestnut oak, on ridgetops. Outbreaks of spongy moths occur intermittently in Virginia and populations tend to crash after a few years.

What damage does it cause?

Young spongy moth caterpillars create small “shot-holes” in soft leaf tissue while older caterpillars often consume the whole leaf. Spongy moth caterpillars can defoliate entire trees. During outbreak years, they are capable of defoliating hundreds of thousands of acres of forestland. Healthy trees usually survive one or two years of defoliation, but multiple consecutive years of attack may lead to tree death, especially if trees are already stressed by other factors such as drought.



Spongy moth caterpillar feeding. Caterpillars have five pairs of blue dots followed by six pairs of red dots.

How can you protect your trees?

Several methods of control are available to prevent damage to trees on your property. Treatment of individual trees may provide control to those trees, but will not stop a spongy moth outbreak and will not prevent caterpillars from invading from surrounding areas.

Egg Masses

Beginning in July, spongy moth adults begin to lay egg masses on tree bark, nearby rocks or the underside of branches. Physically remove and destroy egg masses or apply horticultural oils and soaps to egg masses before they hatch in early spring.

Barriers

Place barriers (sticky or burlap bands) on tree trunks to trap crawling caterpillars. Burlap bands should be checked daily and caterpillars should be removed and placed in soapy water. Remove barriers by mid-summer to prevent them from girdling the tree or providing habitat for spongy moth adults to lay eggs.



Spongy moth egg masses are tan, 1-3 inches long, and covered in fine, soft hairs.

Chemical Control

Several pesticides are labeled for spongy moth with various application methods. Many of these products require specialized equipment and a certified pesticide applicator license for application. Working with a certified arborist is highly recommended:

<https://www.treesaregood.org/findanarborist>

- ◆ Systemic pesticides, such as emamectin benzoate and acephate, can be applied as a root flare or soil injection in early spring or the fall before caterpillars emerge.
- ◆ A number of broad-spectrum pesticides are labeled for spongy moth control, such as spinosad, bifenthrin, permethrin, chlorantraniliprole and carbaryl. These contact insecticides should be applied to host tree foliage when caterpillars have emerged and are starting to feed. Multiple applications to the entire tree canopy are often recommended, depending on the product label.
- ◆ *Bacillus thuringiensis kurstaki* (Btk) is a biopesticide that should be applied as a foliar spray in early spring when caterpillars first emerge. Btk is a naturally occurring bacterium that kills any caterpillar that consumes it within about a week of application.
- ◆ Insect growth regulators, such as diflubenzuron and tebufenozide, can be applied to the foliage of host trees. This type of pesticide controls spongy moth by affecting the insect's growth cycle and is most effective when applied to young caterpillars.

Minimizing Risk

Stressed trees are more likely to suffer long-term impacts after defoliation, so minimize water stress by irrigating yard trees during periods of drought and properly mulching around trees.

Natural Control

Some forms of biological control exist in the environment and are often credited for natural spongy moth population crashes.

- ◆ *Entomophaga maimaiga* (E.m.) is an introduced fungus that spreads in cool, wet springs. Infected caterpillars hang in a vertical position on tree bark. E.m. can cause high levels of caterpillar mortality which often results in the crash of spongy moth populations.
- ◆ Another form of biological control is *Lymantria dispar* nucleopolyhedrovirus (NPV). This virus spreads easily through high-density populations. Spongy moth caterpillars killed by NPV hang from tree bark in an upside down V-shape.
- ◆ Other forms of biological control include an introduced egg parasitoid (*Ooencyrtus kuvanae*) and natural enemies such as ground beetles and small mammals.



Spongy moth mortality from NPV (upside down V), and E.m. (hanging vertically)

For more information about services or programs in your area, contact your local DOF office:

www.DOF.Virginia.gov



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FT0068; 04/2024

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